Silicon Carbide

SILICON CARBIDE

Silicon Carbide (SiC) is highly wear resistant and also has good mechanical properties, including high temperature strength and thermal shock resistance. SiC, as a technical ceramic, is produced in two main ways. Reaction bonded SiC is made by infiltrating compacts made of mixtures of SiC and Carbon with liquid Silicon. The Silicon reacts with the Carbon forming SiC. The reaction product bonds the SiC particles. Sintered SiC is produced from pure SiC powder with non-oxide sintering aids. Conventional ceramic forming processes are used and the material is sintered in an inert atmosphere at temperatures up to 2000°C or higher.

Typical characteristics include:

Low density
High strength
Good high temperature strength (Reaction bonded)
Oxidation resistance (Reaction bonded)
Excellent thermal shock resistance
High hardness and wear resistance
Excellent chemical resistance
Low thermal expansion and high thermal conductivity
Electrical conductivity

Typical applications include:

Fixed and moving turbine components
Seals, bearings, pump vanes
Ball valve parts
Wear plates
Kiln furniture
Heat exchangers

Materials

- Aluminium Nitride
- Alumina - Aluminium Oxide
- Brazing Metals and Alloys
- Cordierite
- CVD Diamond
- DLC & Diamondshield Coatings
- Engineered Coatings
- Glass Ceramic
- Glass Seals
- Metal Injection Moulding
- Magnesia - Magnesium Oxide
- Pyrolytic Boron Nitride
- Silicon Carbide
- Silicon Nitride
- Steatite
- Titania - Titanium Dioxide

Semiconductor wafer processing equipment

PLEASE USE THE CONTACT FORM FOR FURTHER INFORMATION

- Zirconia - Zirconium Oxide
- Zirconia Toughened Alumina
